Policy: W-04-04
Policy Title: Distribution System Flushing
Policy Purpose: Water Quality
Implementation Date: 10/19/2004
Revision Date: N/A

TOWN OF WESTFIELD
PUBLIC WORKS DEPARTMENT
DISTRIBUTION SYSTEM FLUSHING

A comprehensive preventative maintenance program for a water distribution system will include a thorough flushing at least once a year.

The program will be planned for periods of low demand in either the spring of fall. Because customers might be inconvenienced by reduced pressure or discolored water, they, as well as local fire departments, will be notified as to the time and place of the flushing and the reason for it. Special notification will be given large customers, hospitals, dialysis clinics, food processing plants, finishing labs, etc. Customers will be advised to flush service lines following main flushing.

The flushing will begin at the source of clear water and proceed in phases to the extremities of the distribution system keeping clear water behind the area being flushed. When planning for distribution system flushing, reference is made to distribution grid maps and then individual sections of mains will be flushed. Sectionalizing has the advantage of controlling the source of the water, while yielding the greatest velocity for given conditions. The length of main being flushed should be as short as possible, especially on small diameter pipe and the flow be matched to the pipe size. Hydrants should be opened wide enough to get flows in the main of at least 2.5 feet per second whenever possible. The flow requirement would be as follows:

$Q = V \times 2.45d^2$ where Q = flow in gallons per minute (gpm)
V = velocity in ft./sec. and
D = diameter in inches

Pressure will not be permitted to drop below state requirements. Lines downstream from the point of flushing are particularly susceptible to pressure loss. Under no circumstances will a back siphon condition be allowed to develop. In order to avoid water hammer in the distribution system, hydrants will be opened and closed slowly. Flow of water from hydrants will be directed in such a manner as to avoid damage to any public or private property. The use of a diffuser is recommended.

On those mains which have blowoffs, the blowoffs in addition to the hydrants will be used for flushing.

Recordkeeping will be kept in accordance with Figure 1. These test results will be made available to water quality personnel for water quality evaluation. This

information may then be used in updating or modifying the flushing program. A microscopic analysis of discharged material can help determine the source of undesirable water quality.

Depending upon the size of the system, manpower available and other variables, it may be possible to conduct the hydrant inspection program simultaneously with distribution system flushing.

FIGURE 1

WESTFIELD PUBLIC WORKS DEPARTMENT

DISTRIBUTION FLUSHING REPORT

Hydrant # _____

Blowoff # _____

Location _____

Make _____ Size _____

2-1/2" Nozzles _____ Steamer Nozzles _____

Opens _____ Size Main _____Size Branch _____ Branch Valve No._____

Flushing Dates

Results						
Time of flushing						
Time req'd to clear						
Description of water						
Discoloration						
Odor						
Static pressure						
Residual pressure						
Flow						
Conducted by						

Remarks:

_____

_____

_____

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